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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,146	09/20/2005	Dirk Geilfus	0119010-00109	7443
29177 7590 06/12/2008 BELI., BOYD & LLOYD, LLP P.O. BOX 1135 CHICAGO, IL 60690				
EXAMINER KAO, JUTAI				
ART UNIT 2616		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/550,146

Applicant(s)

GEILFUS ET AL.

Examiner

JUTAI KAO

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2008.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-18 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 26 March 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Response to Arguments

2. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

The original rejection is maintained but modified in order to cover the new claim limitations. The examiner disagrees with the applicant's argument saying that the master router in Jensen does not perform the monitoring of criteria and the switching between master and backup router. As shown in the previous action, Jensen discloses:

[0029] Once router 108 has determined that router 106 has failed, router 108 may take over operations for router 106...

Therefore, the router 108 can be considered the master router that monitors the criteria of whether router 106 has failed, and switches the routing from router 106 to itself when it detects that router 106 has failed and thus reads on the claim limitation.

Drawings

Amendments made to the drawings are accepted and previous objections are withdrawn.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 and 17-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Jensen (US 2002/0186653).

Regarding claim 1, a method for routing telecommunications traffic between a network (see network system 100 in Fig. 1) and a sub-network (see sub-network including routers 104-110 and clients 112-120 in Fig. 1), the sub-network including a

master router (see router 108 in Fig. 1) and a back up router (see router 106 in Fig. 1), wherein the master and back up routers route the traffic in the sub-network according to a virtual router redundancy protocol (see "VRRP system, one router may be elected as the master router with the other routers acting as backups in case of the failure of the master router" recited in paragraph [0009]; or see "'standby router" as used herein may refer to a network node that operates as part of an alternate path to route information" recited in paragraph [0013]; both paragraphs show methods of redundant routing), the method comprising the steps of: setting criteria that relates to a condition of the network to the redundancy protocol of the sub-network (see "Once router 108 has determined that router 106 has failed" recited in paragraph [0029]; wherein the failure of router 106 is considered the criteria); triggering switching between the routing devices according to the redundancy protocol (see "Once router 108 has determined that router 106 has failed, router 108 may take over operations for router 106" recited in paragraph [0029]).

Regarding claim 17, a system for routing communications traffic (see network system 100 in Fig. 1), the system comprising: a network for transceiving the telecommunication traffic (see network system 100 and/or network 102 in Fig. 1); a sub-network for transceiving the telecommunications traffic from with the network (see sub-network including routers 104-110 and clients 112-120 in Fig. 1); a master router (see router 108 in Fig. 1) and a back up router (see router 106 in Fig. 1), wherein the master router and the backup router are configured to route the telecommunications traffic in the sub-network according to a virtual router redundancy protocol (see "VRRP system, one router may be elected as the master router with the other routers acting as backups

in case of the failure of the master router" recited in paragraph [0009]; or see "'standby router" as used herein may refer to a network node that operates as part of an alternate path to route information" recited in paragraph [0013]; both paragraphs show methods of redundant routing); and a criteria that relates a condition of the network to the redundancy protocol, the master router configured to monitor the criteria thereby causing the master router to trigger switching between the master router and the back up router route the telecommunications traffic according to the condition in the network (see "Once router 108 has determined that router 106 has failed" recited in paragraph [0029]; wherein the failure of router 106 is considered the criteria).

Regarding claim 18, wherein the network is an Internet Protocol network (see "IP" recited in paragraph [0009]).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 2-7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen (US 2002/0186653) in view of Thang (US 2002/0167898).

Jensen discloses the claimed limitations as shown in the above paragraphs.

Jensen does not disclose the following features: regarding claim 2, wherein the criteria relates an interruption in a link of a router interface between the network and the sub-network to switching of the router devices according to the redundancy protocol; regarding claim 3, wherein the criteria relates a number of bit failures of a router interface between the network and the sub-network to switching of the router devices according to the redundancy protocol; regarding claim 4, wherein the criteria relates a number of bit failures of a router interface between the network and the sub-network to switching of the router devices according to the redundancy protocol; regarding claim 5, wherein the criteria relates traffic load of a router interface between the network and the sub-network to switching of the router devices according to the redundancy protocol; regarding claim 6, wherein the criteria relates traffic load of a router interface between the network and the sub-network to switching of the router devices according to the redundancy protocol; regarding claim 7, wherein the criteria relates traffic load of a router interface between the network and the sub-network to switching of the router devices according to the redundancy protocol; regarding claim 16, wherein the criteria

relates a number of resources of the network available to switching of the router devices according to the redundancy protocol.

Thang discloses a restoration of IP networks using precalculated restoration routing tables including the following features.

Regarding claim 2, wherein the criteria relates an interruption in a link (see Fig. 5, which shows a link interruption between nodes 2 and 3, and the corresponding rerouting scheme) of a router interface between the network and the sub-network (Jensen discloses the network/sub-network architecture as discussed in the above paragraphs) to switching of the router devices (see the secondary routing scheme in Fig. 5c) according to the redundancy protocol (disclosed in Jensen).

Regarding claim 3, wherein the criteria relates a number of bit failures (see "Failures...high bit error rate" recited in paragraph [0009]) of a router interface between the network and the sub-network (Jensen discloses the network/sub-network architecture as discussed in the above paragraphs) to switching of the router devices (see the secondary routing scheme in Fig. 5c) according to the redundancy protocol (disclosed in Jensen).

Regarding claim 4, wherein the criteria relates a number of bit failures (see "Failures...high bit error rate" recited in paragraph [0009]) of a router interface between the network and the sub-network (Jensen discloses the network/sub-network architecture as discussed in the above paragraphs) to switching of the router devices (see the secondary routing scheme in Fig. 5c) according to the redundancy protocol (disclosed in Jensen).

Regarding claim 5, wherein the criteria relates traffic load (see “Failures...congestion” recited in paragraph [0009], wherein congestion is known to be a condition of traffic overload) of a router interface between the network and the sub-network (Jensen discloses the network/sub-network architecture as discussed in the above paragraphs) to switching of the router devices (see the secondary routing scheme in Fig. 5c) according to the redundancy protocol (disclosed in Jensen).

Regarding claim 6, wherein the criteria relates traffic load (see “Failures...congestion” recited in paragraph [0009], wherein congestion is known to be a condition of traffic overload) of a router interface between the network and the sub-network (Jensen discloses the network/sub-network architecture as discussed in the above paragraphs) to switching of the router devices (see the secondary routing scheme in Fig. 5c) according to the redundancy protocol (disclosed in Jensen).

Regarding claim 7, wherein the criteria relates traffic load (see “Failures...congestion” recited in paragraph [0009], wherein congestion is known to be a condition of traffic overload) of a router interface between the network and the sub-network (Jensen discloses the network/sub-network architecture as discussed in the above paragraphs) to switching of the router devices (see the secondary routing scheme in Fig. 5c) according to the redundancy protocol (disclosed in Jensen).

Regarding claim 16, wherein the criteria relates a number of resources of the network available (see “Failures...addition of resources” recited in paragraph [0009], that is, by adding resources, the number of resources of the network system changes, which is considered as a failure condition requiring restoration in Thang's system) to

switching of the router devices according to the redundancy protocol (disclosed in Jensen).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Jensen using features, as taught by Thang, in order to provide fast recovery in different network failure conditions.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen (US 2002/0186653) in view of Callon (US 2002/0131362).

Jensen discloses the claimed limitations as shown in the above paragraphs.

Jensen does not disclose the following features: regarding claim 8, wherein the criteria relates an availability of a router interface between the network and the sub-network according to a routing table coupled to the network to switching of the router devices according to the redundancy protocol.

Callon discloses a method of network routing using link failure information including the following features.

Regarding claim 8, wherein the criteria relates an availability of a router interface between the network and the sub-network according to a routing table (see "router 4D receives an update message from router 4C indicating that this route is also unavailable does the routing table of router 4D converge to accurately reflect the current topology" recited in paragraph [0025], that is, the unavailability update message of the route in routing table triggers the switching and the routing table update) coupled to the network

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to switching of the router devices according to the redundancy protocol (disclosed in Jensen).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Jensen using features, as taught by Callon, in order to provide fast recovery in different network failure conditions.

9. Claim 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen (US 2002/0186653) in view of Thang (US 2002/0167898) as applied to claim 2, 3 and 5 above, and further in view of Callon (US 2002/0131362).

Jensen and Thang disclose the claimed limitations as shown in the above paragraphs.

Jensen and Thang do not disclose the following features: regarding claim 9, wherein the criteria relates an availability of a router interface between the network and the sub-network according to a routing table coupled to the network to switching of the router devices according to the redundancy protocol; regarding claim 10, wherein the criteria relates an availability of a router interface between the network and the sub-network according to a routing table coupled to the network to switching of the router devices according to the redundancy protocol; regarding claim 11, wherein the criteria relates an availability of a router interface between the network and the sub-network according to a routing table coupled to the network to switching of the router devices according to the redundancy protocol.

Callon discloses a method of network routing using link failure information including the following features.

Regarding claim 9, wherein the criteria relates an availability of a router interface between the network and the sub-network according to a routing table (see "router 4D receives an update message from router 4C indicating that this route is also unavailable does the routing table of router 4D converge to accurately reflect the current topology" recited in paragraph [0025], that is, the unavailability update message of the route in routing table triggers the switching and the routing table update) coupled to the network to switching of the router devices according to the redundancy protocol (disclosed in Jensen).

Regarding claim 10, wherein the criteria relates an availability of a router interface between the network and the sub-network according to a routing table (see "router 4D receives an update message from router 4C indicating that this route is also unavailable does the routing table of router 4D converge to accurately reflect the current topology" recited in paragraph [0025], that is, the unavailability update message of the route in routing table triggers the switching and the routing table update) coupled to the network to switching of the router devices according to the redundancy protocol (disclosed in Jensen).

Regarding claim 11, wherein the criteria relates an availability of a router interface between the network and the sub-network according to a routing table (see "router 4D receives an update message from router 4C indicating that this route is also unavailable does the routing table of router 4D converge to accurately reflect the current

topology" recited in paragraph [0025], that is, the unavailability update message of the route in routing table triggers the switching and the routing table update) coupled to the network to switching of the router devices according to the redundancy protocol (disclosed in Jensen).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Jensen and Thang using features, as taught by Callon, in order to provide fast recovery in different network failure conditions.

10. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen (US 2002/0186653) in view of Lee (US 2003/0023893).

Jensen discloses the claimed limitations as shown in the above paragraphs.

Jensen does not disclose the following features: regarding claim 12, wherein the criteria relates a number of entries in a routing table coupled to the network to switching of the router devices according to the redundancy protocol.

Lee discloses a fault-tolerant routing scheme for a multi-path interconnection fabric in a storage network including the following features.

Regarding claim 12, wherein the criteria relates a number of entries in a routing table (see "For example, if the interconnection fabric has four independent routes between each node pair...all four of the paths may be stored as entries in a routing table..." recited in paragraph [0074]; that is, in this example, a number of four entries are related to the switching according to the redundancy protocol) coupled to the

network to switching of the router devices according to the redundancy protocol (disclosed in Jensen).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Jensen using features, as taught by Lee, in order to provide fast recovery in different network failure conditions.

11. Claim 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen (US 2002/0186653) in view of Thang (US 2002/0167898) as applied to claim 2 and 3 above, and further in view of Lee (US 2003/0023893).

Jensen and Thang disclose the claimed limitations as shown in the above paragraphs.

Jensen and Thang do not disclose the following features: regarding claim 13, wherein the criteria relates a number of entries in a routing table coupled to the network to switching of the router devices according to the redundancy protocol; regarding claim 14, wherein the criteria relates a number of entries in a routing table coupled to the network to switching of the router devices according to the redundancy protocol.

Lee discloses a fault-tolerant routing scheme for a multi-path interconnection fabric in a storage network including the following features.

Regarding claim 13, wherein the criteria relates a number of entries in a routing table (see "For example, if the interconnection fabric has four independent routes between each node pair...all four of the paths may be stored as entries in a routing table..." recited in paragraph [0074]; that is, in this example, a number of four entries

are related to the switching according to the redundancy protocol) coupled to the network to switching of the router devices according to the redundancy protocol (disclosed in Jensen).

Regarding claim 14, wherein the criteria relates a number of entries in a routing table (see "For example, if the interconnection fabric has four independent routes between each node pair...all four of the paths may be stored as entries in a routing table..." recited in paragraph [0074]; that is, in this example, a number of four entries are related to the switching according to the redundancy protocol) coupled to the network to switching of the router devices according to the redundancy protocol (disclosed in Jensen).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Jensen and Thang using features, as taught by Lee, in order to provide fast recovery in different network failure conditions.

12. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen (US 2002/0186653) in view of Thang (US 2002/0167898) and Nagami (US 2005/0100025).

Jensen discloses the claimed limitations as shown in the above paragraphs.

Jensen does not disclose the following features: regarding claim 15, wherein the criteria relates a load of a processor involved in routing the telecommunications traffic to switching of the router devices according to the redundancy protocol.

Thang discloses a restoration of IP networks using precalculated restoration routing tables including the following features.

Regarding claim 15, wherein the criteria relates a load of a processor involved in routing the telecommunications traffic (see "Failures...congestion" recited in paragraph [0009], wherein congestion is known to be a condition of traffic overload) to switching of the router devices according to the redundancy protocol (disclosed in Jensen).

Nagami discloses a network interconnection apparatus, network node apparatus, and packet transfer method including the following features.

Regarding claim 15, wherein congestion could be a network congestion or a CPU overload congestion (see "congestion at the CPU within the router and the network" recited in paragraph [0247]).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Jensen using features, as taught by Thang and Nagami, in order to provide fast recovery in different network failure conditions.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUTAI KAO whose telephone number is (571)272-9719. The examiner can normally be reached on Monday ~Friday 7:30 AM ~5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571)272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ju-Tai Kao

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